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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,196	08/17/2001	H. Holden Thorp	5470.277	4849
20792	7590	05/18/2005	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627			JACKSON, MONIQUE R	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 05/18/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,196

Applicant(s)

THORP ET AL.

Examiner

Monique R Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-16, 18-22, 25-33, 43 and 44 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12, 23, 24, 34-36 and 40-42 is/are rejected.
- 7) ☒ Claim(s) 5 and 37-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The amendment filed 1/28/05 has been entered. Claim 17 has been canceled. New claims 33-44 have been added. Claims 1-16 and 18-44 are pending in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Upon reconsideration, the indicated allowability of claims 1-4 and 8-12 and the indicated allowable subject matter of Claims 6-7 and 23-24 have withdrawn in view of the following rejections.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-4, 6-12, 23-24, 34-36 and 40-42 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an ionic liquid melt comprising a salt of an organic polymer ion and a polyether or polysiloxane counterion wherein the organic polymer ion is polypeptides, polynucleic acids, polystyrenes, and polysaccharides, does not reasonably provide enablement for any liquid melt comprising any first redox active compound or any first redox active compound and a Tg between -50 and 100°C. An organic polymer ion of polypeptides, polynucleic acids, polystyrenes, or polysaccharides is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make

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the invention commensurate in scope with these claims. The original disclosure at the time of filing clearly discloses that the invention is directed to molten salts of nucleic or polynucleic acids or molten salts of the polymer ions as recited above. With respect to the Tg requirement, it is noted that the specification refers to molten salts having a glass transition temperature range as instantly claimed wherein the molten composition comprises a polynucleic acid anion, and more specifically, with a polyether cation. Hence, given the instant disclosure at the time of filing, the instant claims are much broader than the inventive subject matter and beyond the scope of the invention described in the specification.

6. Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 6 and 7 recite that limitation "The device according to claim 1, wherein said ionic liquid melt further comprises a counterion" however it is noted that instant claim 1 fails to positively recite a first ion. Hence, one having ordinary skill in the art would not be reasonably apprised of the scope of the claimed invention and could not interpret the metes and bounds of the claim so as to understand how to avoid infringement.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-4 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishizawa et al (USPN 5,310,608.) Ishizawa et al teach a storage battery comprising first, second and third electrodes and a medium comprising an ionic liquid melt comprising a redox active couple

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wherein the medium is contained within a sealed chamber and the medium is not covalently bonded to the first electrode (Abstract; Figures 1-8; Col. 3-4; "Third Embodiment".) With respect to the preamble limitation "An electronic memory device" of Claim 1 and the limitation "refreshable memory device" in Claim 9, the Examiner takes the position that the storage battery taught by Ishizawa et al reads upon these broad terms given that the specification has not provided any definition or specific limitations of what is considered "an electronic memory device" or a "refreshable memory device."

8. Claims 1-4, 6-12, 23-24, 34-36, and 40-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Fanta et al (USPN 6,294,289). Fanta et al teach electrolyte salts useful as electrolyte components in electrochemical cells such as batteries, rechargeable battery cells, fuel cells, capacitors, supercapacitors, electrochemical sensors and electrolytic cells (which read upon the instantly claimed limitations, including electrical memory device, refreshable memory device, enclosed or sealed chamber, , by providing a means for ionic conduction and transport (Abstract; Col. 6, lines 29-44.) Fanta et al provide inventive examples which read upon the instant liquid melts and wherein the redox potential of the electrolyte salts is measured by placing the electrolyte salt in a sealed three-electrode cell wherein the salt is electrically coupled to an electrode but not covalently coupled (Col. 17; Examples 8-9.) Fanta et al include a specific example utilizing a solid, semi-amorphous polyethylene oxide electrolyte salt having a Tg of -4.8°C which falls within the instantly claimed range (Example 8.) Fanta et al further teach that the matrix material of the electrolyte salts may be polyethers such as polyethylene oxide or polypropylene oxide as well as polysiloxanes (Col. 6, lines 11-16.)

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Allowable Subject Matter

9. Claims 5 and 37-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 13-16, 18-22, 25-33 and 43-44 are allowed. The following is a statement of reasons for the indication of allowable subject matter: the closest prior art does not teach or render obvious a polymer composition or ionic liquid melt comprising a salt of an organic polymer ion and a polyether or polysiloxane counterion wherein the organic polymer ion is a polypeptide, a polynucleic acid, a polystyrene, a glycoprotein or a polysaccharide, and wherein the ion or counterion is redox active.

Response to Arguments

11. Applicant's arguments filed 1/28/05 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Monique R. Jackson
Primary Examiner
Technology Center 1700
May 15, 2005